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ABSTRACT

A research project was undertaken in 1992 in order to identify, describe, and analyze current trends and developments in library automation systems and library software. The starting point is work conducted in 1988/1989 that formed the foundation of the book "Computer Software for School Libraries: A Directory." A 1992 survey of software developers and vendors (initial sample of 360) is being used to develop additional information to be published in an updated version of the directory. Preliminary observations make it apparent that there has been an increase in the number of integrated, multi-function library systems on the market, on the order of 272 percent. Some blurring of the distinction between school library systems and other libraries appears to be occurring, and many systems are crossing international boundaries. However, several vendors appear to have gone out of business. Many of those who replied (around 100) to a letter asking for updated product information for a new book, indicated that their products had undergone considerable development. An appendix provides a 16-item select list of directories of library software. (Contains 22 references.) (SLD)

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RESEARCH ON CURRENT TRENDS AND DEVELOPMENTS IN LIBRARY AUTOMATION SYSTEMS

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INTRODUCTION

This paper for the Research Session is based on a research project being undertaken during 1992 with the support of a Canadian SSHRC social sciences and humanities research grant. The general aims of the project are to identify, describe, and analyse current trends and developments in library automation systems and library software. However, since this work is very much "in progress" at the time of writing (July 1992), this paper will provide a basic description of the project and an indication of some of the likely outcomes.

The starting point for the research project is work undertaken by the author in 1988/1989, which formed the foundation of the March 1989 book, *Computer Software for School Libraries: A Directory* (Auslib Press, 1989). This, in turn, was based on work for an earlier edition of the same directory, published in 1986 (Alcuin Library Consultants, 1986). The present project will result in a new publication (to appear in early 1993), a directory of computer software for libraries, which will incorporate material for school libraries; this publication will both update and extend the previous publications. The research project will also look specifically at changes that have occurred in the three-year period between the work for the 1989 book and the compilation of the new 1992/1993 publication.

DIRECTORIES AND SURVEYS

Directories of automated library systems and computer software for libraries and/or school libraries have been published in several countries, beginning in the 1970s. There have been published directories in the United States, the United Kingdom, Australia, New Zealand, Canada, the European Community, among other places. These have taken different forms, and have had different scope, coverage, arrangement, and contents. A selected list is provided at the end of this paper. In addition, many articles have been produced, based on directory-type work; for example, the annual "automated systems marketplace" articles which appear each April in *Library Journal* in the United States, and the annual surveys by Bobbie Merilees and Lynne Lighthall, which appear each year in *Canadian Library Journal*.

The difficulties that the compilers and writers of the directories (or the articles based on directories) have encountered have been taken into account in the design and development of my present project, as has my own experience in preparing the first two editions of my directory. Nevertheless, I have found that my experience reflects the experience of some of the other writers, despite an awareness of the potential problems and despite the various precautions that were taken. While many research (and other) problems

were noted by the various writers and compilers, two particular problems were noted again and again. They will serve as useful examples of the kind of problems that people engaged in research of this type will encounter.

The first is the perennial problem of definition, of setting the boundaries for the study, and of providing criteria for limiting the coverage of the study. In this present project, a basic problem was to set parameters for the inclusion or exclusion of systems and software; in other words, there was a need to deal with the question of just what is an automated library system. In relation to problems of definition, it is interesting to note that Bobbie Merilees, in her annual survey of the automated system marketplace in Canadian public, academic, and special libraries, considers only integrated library systems, and she carefully defines these as systems which offer at least three out of six major library functions, namely acquisitions, cataloguing, online catalogue enquiry (online public access catalogue), circulation, serials management, and media management (AV booking). Further, each of these functions must be able to access and use data in the one bibliographic database. Lynne Lighthall also bases her annual surveys of the Canadian school library automated system marketplace on this definition established by Merilees. However, even a definition like this raises problems: Merilees, in her report of her sixth annual survey, for instance, lists and tabulates data for at least one system which is not considered fully integrated by some of the libraries that have installed it, even taking this definition as a basis for defining "integrated". My own approach, to date, has been to consider all software or systems which can be used to perform traditional or usual library or school library functions, regardless of how that software or system is structured or performs the task, and to describe it in terms of what it does and how it does it. However, this has resulted in a very large database, and one that is growing rapidly. This has its drawbacks, both in terms of database management and later publication of information from the database.

In relation to the problem of ensuring a worthwhile response to the surveys which form the basis of so many "marketplace" reports, it needs to be noted that the problem is not one that is restricted to collecting information about automated library systems. In November 1991, Stephen Arnold undertook a survey of CD-ROM product developers who were developing products for the library market. The purpose of his survey was to identify emerging trends. He mailed a questionnaire to 508 product developers in the United States and Canada who were identified through directories. He received ninety-eight usable responses. He then decided that, though cross-tabulation of the results would have little validity, because the respondents were not necessarily representative of the industry, a descriptive analysis would be useful. The results of this analysis were published in the July 1992 issue of *CD-ROM Professional*. But throughout this analysis, the reader is conscious, as Arnold obviously was, that the comments were based on a small group that was self-selected from the original sample population. The problem of getting a reasonable response rate in such marketplace surveys remains a real one, and various strategies have been devised to attempt to overcome it or to work around it. I will comment on this issue again later in relation to my present project.

THE RESEARCH PROJECT

The aims of this present project (as has been mentioned previously) are to identify, describe, and analyse current trends and developments in library automation systems and library software. The emphasis is on systems and software currently being developed or marketed in the United States of America, Canada, Australia, the United Kingdom, New Zealand, and some European countries. The 1989 book, *Computer Software for School Libraries: A Directory*, listed and described more than sixty integrated library management systems for school libraries and other small libraries - systems that were designed to automate most of the essential library functions like cataloguing, circulation, ordering, and serials control. In addition, it listed more than six hundred other software packages which could be used for just one library function, such as overdues management, inter-library loans, or teaching information skills. The 1992/1993 *Directory*, now in preparation, will include even more integrated library management systems, plus many hundreds of other packages. Because the computer files for this book had not been closed when the conference paper was being prepared, and new information was still being added to the database, conclusions drawn here, based on a comparison of the files for the two books, are very tentative. Nevertheless, even at this stage, some clear trends have emerged, and information on these is worth sharing.

Observations made while updating the files in late 1991 and 1992 led to a reassessment of the nature of the directory, and particularly a rethinking of its scope and coverage. The computer software industry is a very volatile one, with companies changing their name and address, changes of company ownership, and changes in business orientation. Some of the software packages themselves ceased to be marketed between editions; others simply disappeared without trace. Because of company takeovers, changed ownership of the software or other factors, several of the packages have undergone a name change. To add to the confusion, some packages are sold under more than one name, or sold under different names in different countries, or sold on different hardware in different places. It does not help that some very different packages share the same name (no fewer than SIX packages listed in the 1989 edition of the directory were called *Librarian*, or *The Librarian*, for instance). Quite a few of the older packages have undergone extensive re-development, to the point where they now look like completely different systems. Some have been further developed to run on a wider range of hardware or on newer hardware. In addition, it was very clear that many new packages were emerging all the time.

Another factor that was becoming very clear was that it was becoming increasingly more and more difficult to maintain the distinction between "computer software for school libraries" and computer software for libraries in general. Above all else, it was this that led to a reconsideration of the nature and scope of the new 1992/1993 edition of the directory. Systems developed initially as small systems for the school library market were becoming more and more sophisticated as school library expectations rose, and as microcomputer hardware increased in size and power. At the same time, and at the other end of the scale, many of the developers of mainframe systems designed originally for very large libraries, were producing smaller versions of their systems to take advantage of the increased capabilities of the newer microcomputer and minicomputer hardware.

Some school libraries, as well as other smaller libraries, were attracted to these systems. As a result, we see systems like OASIS and MOLLI in public libraries and special libraries, as well as school libraries, while school libraries are purchasing larger systems like MultiLIS or Soutron.

While the computer files had been updated regularly between 1989 and 1991, as relevant information came to hand, concentrated work on the third edition commenced only in September/October 1991. At this stage, letters were sent to all the vendors (some 360 overall) whose systems and software had been included in the second edition (1989), requesting current information about the systems and software listed, and about any new packages that they might have developed or acquired in the time since the second edition was prepared. The letter explained the reason for the request, and gave an outline of the project. In some cases, this letter was followed up with further correspondence and telephone calls.

At the same time, and continuing through May/June 1992, work proceeded on identifying "new" system vendors and software products for inclusion. The following sources of information were used: reviews of the systems and software in journals, newsletters, and current awareness bulletins; articles about trends in library automation in which specific products were mentioned; advertisements in journals, newsletters, and newspapers; searches of the current industry databases available on online information services such as DIALOG, AUSINET, and DATA*STAR; searches of the more informal electronic bulletin boards that have information related to this field; and the ephemeral trade literature. Product literature was collected at conferences, exhibitions, trade shows, and product launchings. In addition, systems and software packages were observed in operation in libraries and information agencies in various countries. Letters were sent to vendors, describing the project, and requesting further information.

At the time of preparing this conference paper, much of the information obtained through these sources has been added to the computer files, but some considerable work remains to be done. It is possible, however, to make some general comments, based on work to date. These preliminary observations are provided to give an indication of the direction that the analysis of the material is taking - and of the type of results that might be expected. However, this statement is made very cautiously! New material is coming to hand all the time, and it will be some weeks yet before it becomes clear whether or not any statistical analyses can be expected to yield sensible or usable results.

GENERAL OBSERVATIONS

- The most obvious trend, during the last three years, has been an increase in the number of integrated, multi-function library systems on the market, however such systems are defined. Between 1986 and 1989, the number of systems listed in my files which offered at least facilities for cataloguing and circulation, plus some other features (perhaps an online public access catalogue, or acquisitions/ordering, serials management, statistics, or reporting) increased 272 per cent. Despite bankrupties, takeovers, and other factors which seem to have

eliminated some of the earlier systems from the market, the number has grown still more since 1989.

- The idea that there has been a blurring of the distinctions between "school library systems" and systems for libraries in general is supported by information that the vendors have supplied about system installations. Vendors of what were previously thought of as school library systems are reporting increased installations in small public libraries and special libraries, while school districts, school networks, and even individual schools are installing what were previously thought of as "large systems".

- Many systems are crossing national boundaries. Several Australian systems have successfully entered the European markets, for instance, and Australian systems are now being marketed overseas in Hebrew, Icelandic, French, Swedish, and multi-lingual versions (among others). At the same time, many overseas systems, like MOLLI, Winnebago, and Dynix, have gained ground in Australia. While Australian systems, like OASIS and Stowe Book Plus, are being sold in the United Kingdom, systems developed in the United Kingdom are making inroads into the Australian market. The same is true of other countries. Canada exports GEAC and MultiLIS and buys Dynix and DOBIS/LIBIS; the United States exports Dynix, Winnebago, VTLS, Inmagic, and Circ Plus/Cat Plus, among others, and buys MultiLIS and GEAC, among others.

- Yet, at the same time, there is a contrary trend in many countries. Bobbie Merilees focussed on this trend, in relation to Canada, in a paper on "The Canadian Library Automation Marketplace" at the Canadian Library Automation Conference in 1990. She noted that of the top seven vendors in the Canadian marketplace in 1989, only one, Dynix, was American, and Dynix had a comparatively large Canadian office. Her research indicated that Canadian librarians demanded fully-fledged Canadian operations from their vendors. They also required "bilingual systems" (interpreted in Canada as systems that support English and French), fully-integrated library automated systems with dial-up access, the ability to accept catalogue records from Canadian sources and vendors, and interfaces to other products. In other countries, the requirements will be different, and Merilees herself points to some differences between the Canadian and United States markets. However, there is evidence that systems can successfully cross national boundaries, although vendors do need to be aware of the constraints.

- Some depressing figures. More than 360 vendors had (between them) some 717 products listed in the 1989 edition of my book *Computer Software for School Libraries: A Directory*. Letters were sent to these 360 plus vendors, asking them for updated product information for the new book. Of those letters, 102 were returned marked "left address" or "unknown at this address", or "delivery attempted - not known". Some of these will reflect just a change of premises (without adequate arrangements for the forwarding of mail), but others will reflect the fact that the firm or person has gone out of business in the last three years. These vendors between them had 150 library-related products.

- No replies were received to a further 151 of these letters to vendors (representing 257 products). They were delivered - had they not been, they would have been returned. Yet, despite the fact that

the "payoff" was a free listing in a published directory, these vendors did not consider a reply to be worthwhile. Some of them are known to have excellent products, and to have developed new products since the 1989 edition of the directory. Some also failed to respond to follow-up letters or to return telephone calls. When I eventually tracked some of them down, the reasons given for a non-reply were interesting, and serve to demonstrate that many vendors do not read their mail properly, nor do they always get accurate messages from their staff about telephone calls.

- Many of the vendors who did reply indicated that their products had undergone substantial development in the last two or three years; many had new products as well. Library systems and software had been re-developed for newer hardware platforms, or to run on a greater variety of hardware platforms. Some systems are being developed for "hybrid" platforms - for example, for a network with an IBM 486 (or compatible) file server but with Apple Macintosh machines to provide the user interface. Networking requirements, at all levels, are being taken seriously by many vendors. The ability to link library systems with CD-ROMs or online information services is becoming increasingly important. New software development tools were being used. Systems and software were becoming more sophisticated, with more features and more intuitive implementation of many features. While some of the new features fall into the category of "bells and whistles" (items with superficial appeal but which add little to the real functionality of the system), others provide substantial benefits for library staff and users - for instance, "patron self-check" facilities as an add-on to the automated circulation system. Online public access catalogues (the point at which the library user interacts with the automated library system) are evolving rapidly, with features such as user-defined or library-defined search screens or menus (tailored to the needs of the users of that particular library) becoming the norm. "Connectivity" and "standards" seem to be the library system/software buzzwords of the early 1990s; the library is no longer seen as an island but as an integral part of wider information systems. At the same time, however, there seems to be an increasing emphasis on designing systems that can be adapted to local needs.

As was mentioned earlier, work on this project is continuing, and more detailed analyses will be undertaken when data entry for the new directory is complete. The results of these analyses will be reflected in the introduction to the new directory, and they will also be the basis of articles, as well as a conference paper for the "Online Information 92" international conference in London in December this year.

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